IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended). A power back-off method to mitigate the effects of far-end crosstalk (FEXT)~~FEXT~~ noise in a communication system comprising at least one transmitter k, the transmitter k transmitting to a central site via a corresponding channel, the method comprising:

determining a transmit power spectral density for the transmitter k, $S(f,l_k)$, according to:

$$S(f,l_k)=\left(\frac{l_k}{l_R}\right)^{\upsilon}\frac{S(f,l_R)\cdot|H(f,l_R)|^2}{|H(f,l_k)|^2}\quad\text{for }\; l_k\le l_R$$

wherein l_k is a channel length of the channel corresponding to the transmitter k, $H(f,l_k)$ is a channel transfer function of the channel corresponding to the transmitter k, l_R is a reference channel length, $H(f,l_R)$ is a reference channel transfer function, $S(f,l_R)$ is a reference transmit power spectral density, and $\upsilon \neq -1 \; or \; 0$; and

controlling transmitter k to transmit at the transmit power spectral density $S(f,l_k)$.

2. (Original). A power back-off method, as per claim 1, wherein υ is set close to one to provide substantially equalized data rates for channels of the communication system.

3. (Original). A power back-off method, as per claim 2, wherein υ is set to approximately 0.95.

4. (Original). A power back-off method, as per claim 1, wherein said communication system is a VDSL system.

5. (Original). A communication system comprising:

at least one transmitter k, the transmitter transmitting to the central site with a transmit power spectral density $S(f,l_k)$ via a corresponding channel, wherein the channel has a length l_k and a channel transfer function $H(f,l_k)$; and

wherein the transmit power spectral density $S(f,lk)$ is governed according to:

$$S(f,l_k) = \left(\frac{l_k}{l_R}\right)^{\upsilon} \frac{S(f,l_R)\cdot|H(f,l_R)|^2}{|H(f,l_k)|^2} \quad \text{for } l_k \le l_R$$

where l_R is a reference channel length, $H(f,l_R)$ is a reference channel transfer function, $S(f,l_R)$ is a reference transmit power spectral density, and $\upsilon \neq -1$ *or* 0.

6. (Original). A communication system, as per claim 5, wherein υ is set close to one to provide substantially equalized data rates for channels of the communication system.

7. (Original). A communication system, as per claim 6, wherein υ is set to approximately 0.95.

8. (Original). A communication system, as per claim 5, wherein said communication system is a VDSL system.

9. (Canceled).

10. (Canceled).

11. (Canceled).

12. (Canceled).

13. (Currently Amended). A transmitter that transmits on a channel in a communication system comprising~~,~~: ~~wherein the~~

a ~~transmitter~~transmitting element that transmits with a transmit power spectral density $S(f,l_k)$ that is controlled to provide substantially equal data rates for each channel in the communication system, said transmit power spectral density $S(f,l_k)$ is defined as:

$$S(f,l_k)=\left(\frac{l_k}{l_R}\right)^{\upsilon}\frac{S(f,l_R)\cdot|H(f,l_R)|^2}{|H(f,l_k)|^2}\quad\text{for } l_k\le l_R$$

wherein l_k is a channel length of the channel that the transmitter transmits on, $H(f,l_k)$ is a channel transfer function of the channel that the transmitter transmits on, $S(f,l_R)$ is a reference transmit power spectral density, l_R is a reference channel length, $H(f,l_R)$ is a reference channel transfer function, and υ is close to one.

14. (Canceled).

15. (Currently Amended). A transmitter that transmits on a channel in a communication system, as per claim ~~14~~13, wherein υ is set to approximately 0.95.

16. (Original). A transmitter that transmits on a channel in a communication system, as per claim 13, wherein the transmitter and the channel are part of a VDSL system.

17. (Currently Amended). A power back-off method to mitigate the effects of far-end crosstalk (FEXT)~~FEXT~~ noise in a communication system comprising at least one transmitter k, the transmitter k transmitting to a central site via a corresponding channel, the method comprising:

determining the transmit power spectral density for the transmitter k, $S(f,l_k)$, according to:

$$S(f,l_k) = G \cdot \left(\frac{l_k}{l_R}\right)^{\upsilon} \frac{S(f,l_R) \cdot |H(f,l_R)|^2}{|H(f,l_k)|^2} \qquad \text{for } l_k \le l_R$$

wherein l_k is a channel length of the channel corresponding to the transmitter k, $H(f,l_k)$ is a channel transfer function of the channel corresponding to the transmitter k, l_R is a reference channel length, $H(f,l_R)$ is a reference channel transfer function, $S(f,l_R)$ is a reference transmit power spectral density, and G has a value that depends on the channel length l_k such that two or more data rate service areas are defined; and

controlling transmitter k to transmit at the transmit power spectral density $S(f,l_k)$.

18. (Original). A power back-off method, as per claim 17, wherein G>1 for channel length l_k less than a length l_{R1} that delineates a first data rate service area and G=1 for channel length l_k greater than the length l_{R1} so as to define a second data rate service area.

19. (Original).A power back-off method, as per claim 17, wherein υ is set close to one to provide substantially equalized data rates for channels of the communication system.

20. (Original).A power back-off method, as per claim 19, wherein υ is set to approximately 0.95.

21. (Original).A power back-off method, as per claim 17, wherein said communication system is a VDSL system.

22. (Original). A communication system comprising:

at least one transmitter k, the transmitter transmitting to the central site with a transmit power spectral density $S(f,l_k)$ via a corresponding channel, wherein the channel has a length l_k and a reference channel transfer function $H(f,l_k)$; and

wherein the transmit power spectral density $S(f,lk)$ is governed according to:

$$S(f,l_k) = G \cdot \left(\frac{l_k}{l_R} \right)^{\upsilon} \frac{S(f,l_R) \cdot |H(f,l_R)|^2}{|H(f,l_k)|^2} \qquad \text{for } l_k \le l_R$$

where l_R is a reference channel length, $H(f,l_R)$ is a reference channel transfer function, $S(f,l_R)$ is a reference transmit power spectral density , and G has a value that depends on the channel length l_k such that two or more data rate service areas are defined.

23. (Original).A communication system, as per claim 22, wherein G>1 for channel length l_k less than a length l_{R1} that delineates a first data rate service area and G=1 for channel length l_k greater than the length l_{R1} so as to define a second data rate service area.

24. (Original).A communication system, as per claim 22, wherein υ is set close to one to provide substantially equalized data rates for channels of the communication system.

25. (Original).A communication system, as per claim 24, wherein υ is set to approximately 0.95.

26. (Original).A communication system, as per claim 22, wherein said communication system is a VDSL system.

27. (Canceled).

28. (Canceled).

29. (Canceled).

30. (Canceled).

31. (Canceled).